# Comparisons of Job Characteristics

**Focus Occupation: Hydrologists (19-2043)**
**Associated Occupation: Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)**


Compare Knowledge
Compare Skills
Compare Abilities
Compare Detailed Work Activities
Compare Tools and Technologies


| | |
|---|---|
| << | Focus occupation element is much lower |
| < | Focus occupation element is lower |
| 0 | Focus occupation element is at a similar level |
| > | Focus occupation element is at a higher level |
| >> | Focus occupation element is at a much higher level |

## Knowledge

**Similarity of Focus Occupation to Associated Occupation: 72**

**Focus Occupation: Hydrologists (19-2043)**
**Associated Occupation: Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)**

| Associated Occupation's Key Knowledge Elements | Average Rating, All Occupations | Associated Occupation's Rating | Focus Occupation's Rating | | Evaluation of Focus Occupation |
|---|---|---|---|---|---|
| Engineering and Technology | 5.7 | 20.6 | 17.4 | < | Expanded education and/or training may be required |
| Design | 5.2 | 16.6 | 12.6 | << | Extensive education and/or training may be required |
| Mathematics | 9.2 | 15.3 | 17.7 | > | Current knowledge level is likely sufficient |
| Production and Processing | 6.0 | 12.6 | 5.3 | << | Extensive education and/or training may be required |
| Law and Government | 5.9 | 12.5 | 11.3 | < | Expanded education and/or training may be required |
| Physics | 4.3 | 11.4 | 15.7 | >> | Current knowledge level is likely more than sufficient |
| Public Safety and Security | 6.9 | 10.9 | 8.7 | < | Expanded education and/or training may be required |
| Building and Construction | 4.0 | 10.7 | 7.6 | << | Extensive education and/or training may be required |
| Chemistry | 4.8 | 10.2 | 15.6 | >> | Current knowledge level is likely more than sufficient |
| Geography | 3.9 | 10.2 | 16.7 | >> | Current knowledge level is likely more than sufficient |

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

## Skills

**Similarity of Focus Occupation to Associated Occupation: 82**

**Focus Occupation: Hydrologists (19-2043)**
**Associated Occupation: Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)**

| Associated Occupation's Key Skills Elements | Average Rating, All Occupations | Associated Occupation's Rating | Focus Occupation's Rating | Evaluation of Focus Occupation | |
|---|---|---|---|---|---|
| Judgment and Decision Making | 9.4 | 15.1 | 11.2 | << | Extensive development of skills in this area may be required |
| Complex Problem Solving | 9.1 | 14.8 | 11.9 | < | A higher skill level may be required |
| Mathematics | 6.2 | 13.9 | 12.8 | 0 | Current skill level may be sufficient |
| Monitoring | 9.9 | 13.9 | 11.7 | < | A higher skill level may be required |
| Systems Analysis | 6.5 | 13.0 | 9.9 | << | Extensive development of skills in this area may be required |
| Systems Evaluation | 6.4 | 12.7 | 8.9 | << | Extensive development of skills in this area may be required |
| Operations Analysis | 5.0 | 11.5 | 5.8 | << | Extensive development of skills in this area may be required |
| Management of Financial Resources | 3.3 | 9.8 | 4.0 | << | Extensive development of skills in this area may be required |
| Management of Material Resources | 3.7 | 9.7 | 4.5 | << | Extensive development of skills in this area may be required |
| Programming | 2.2 | 8.3 | 6.5 | < | A higher skill level may be required |
| Technology Design | 2.6 | 7.3 | 3.7 | << | Extensive development of skills in this area may be required |

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

## Abilities

**Similarity of Focus Occupation to Associated Occupation: 98**

**Focus Occupation: Hydrologists (19-2043)**
**Associated Occupation: Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)**

| Associated Occupation's Key Abilities Elements | Average Rating, All Occupations | Associated Occupation's Rating | Focus Occupation's Rating | Evaluation of Focus Occupation | |
|---|---|---|---|---|---|
| Oral Comprehension | 12.5 | 16.3 | 14.2 | < | Some improvement in abilities may be required |
| Written Comprehension | 11.0 | 15.7 | 14.6 | 0 | Current ability level may be sufficient |
| Deductive Reasoning | 10.6 | 15.5 | 13.4 | < | Some improvement in abilities may be required |
| Written Expression | 9.8 | 15.1 | 14.1 | 0 | Current ability level may be sufficient |
| Problem Sensitivity | 11.1 | 14.8 | 13.9 | 0 | Current ability level may be sufficient |
| Information Ordering | 9.9 | 14.4 | 11.6 | < | Some improvement in abilities may be required |
| Inductive Reasoning | 10.2 | 14.1 | 14.6 | 0 | Current ability level may be sufficient |
| Category Flexibility | 9.0 | 13.8 | 11.2 | < | Some improvement in abilities may be required |
| Mathematical Reasoning | 6.3 | 12.8 | 13.8 | 0 | Current ability level may be sufficient |
| Visualization | 7.5 | 12.4 | 10.4 | < | Some improvement in abilities may be required |
| Flexibility of Closure | 7.8 | 12.2 | 12.0 | 0 | Current ability level may be sufficient |
| Fluency of Ideas | 7.6 | 11.8 | 11.3 | 0 | Current ability level may be sufficient |
| Speed of Closure | 5.9 | 8.7 | 6.3 | << | Extensive improvement in abilities may be required |

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

## Activities that Both Occupations Have in Common

**Similarity of Focus Occupation to Associated Occupation: 80**

**Focus Occupation: Hydrologists (19-2043)**
**Associated Occupation: Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)**

| Work Activities | Exclusivity of Activity |
|---|---|
| Adhere to safety procedures | 12 |
| Advise clients or customers | 19 |
| Analyze ecosystem data | 69 |
| Analyze geological research data | 87 |
| Analyze scientific research data or investigative findings | 27 |
| Collect scientific or technical data | 30 |
| Communicate technical information | 4 |
| Develop or maintain databases | 30 |
| Develop plans for programs or projects | 31 |
| Develop policies, procedures, methods, or standards | 21 |
| Develop tables depicting data | 33 |
| Direct and coordinate scientific research or investigative studies | 27 |
| Explain complex mathematical information | 30 |
| Interpret aerial photographs | 69 |
| Perform statistical analysis in physical science or geological research | 71 |
| Prepare reports | 8 |
| Prepare technical reports or related documentation | 22 |
| Read maps | 42 |
| Resolve engineering or science problems | 46 |
| Use computers to enter, access or retrieve data | 3 |
| Use geographic positioning system (GPS) | 81 |
| Use geographical information system (GIS) software | 72 |
| Use knowledge of investigation techniques | 16 |
| Use library or online Internet research techniques | 21 |
| Use mathematical or statistical methods to identify or analyze problems | 30 |
| Use physical science research techniques | 68 |
| Use quantitative research methods | 35 |
| Use relational database software | 26 |
| Use scientific research methodology | 21 |
| Use spreadsheet software | 18 |
| Use word processing or desktop publishing software | 17 |

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

# Tools and Technologies that Both Occupations Have in Common

**Similarity of Focus Occupation to Associated Occupation: 84**

**Focus Occupation: Hydrologists (19-2043)**
**Associated Occupation: Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)**

| Tools and Technologies | Exclusivity |
|---|---|
| Audio and visual equipment | 4 |
| Business function specific software | 1 |
| Computer printers | 2 |
| Computers | 1 |
| Content authoring and editing software | 1 |
| Data management and query software | 1 |
| Industry specific software | 1 |
| Measuring and layout tools | 3 |
| Rock and strata measuring equipment | 47 |

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.